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Activities of Illegal Weapons Criminal Component of Hybrid Threats

Oleksandr Korystin* [0000-0001-9056-5475], Nataliia Svyrydiuk [0000-0001-9772-1119]

State Scientifically Research Institute of the Ministry of Internal Affairs, Kyiv, Ukraine
alex@korystin.pro

ABSTRACT
The paper focuses on the study of hybrid threats in the civil security sector in Ukraine. It is substantiated, based on the factor analysis, the hypothesis of existence of hybrid threats related to the spread of certain types of crime in Ukraine, in particular the activities of illegal armed groups. An empirical study based on the expert survey's results in the system of bodies of the Ministry of Internal Affairs of Ukraine on identification and assessment of hybrid threats in the civil security sector, as well as quantitative assessment of law enforcement agencies' ability to counter these threats. Emphasis is placed on estimating variations in vulnerability of the law enforcement system. It is assessed, based on the linear regression model, the risk assessment of spreading of the hybrid threat "activity of illegal armed groups"; priority risk reduction factors were identified and an appropriate forecast model was formed.

Keywords*: hybrid threats, factor analysis, system of MIA bodies, capability, vulnerability, correlation, risk assessment, regression analysis.*

1. INTRODUCTION

The issue of combating hybrid threats covers the problems of national security quite broadly and comprehensively. This, above all, requires a significant analysis of the situation, the study of those factors that cause the inability to combat effectively hybrid threats, in particular in the areas of public safety and civil protection [1]. In general, implementing security methodology, the key components of forming an effective system for counteracting hybrid threats are identification and assessment of hybrid threats, assessment of risks of their spread, determination of vulnerability or ability to counter hybrid threats, etc.

2. RESEARCH ANALYSIS

In recent years, it has been conducted quite a few researches in the field of combating hybrid threats: Arzumanyan R. [2], Gbur Z. [3], Magda E. [4], Martyniuk V. [5], Predborsky V. [6], Rusnak I. [7] and others. At the same time, it is a need to implement in practice even thorough theoretical studies of this problem, introduction into the activities of national security entities, empirical and applied research confirmation of the hypotheses.

3. THE PURPOSE OF THE PAPER

The purpose of the paper, based on factor analysis [8], is to identify homogeneous groups of hybrid threats in the civil security sector, analyze the risk level of hybrid threats' spreading of related to crime; on the basis of correlation analysis [9] to determine the factors that shape the capabilities or vulnerabilities [10] to reduce the risk of illegal armed groups. Based on the linear regression [11] model, to assess the risk of the spread of the hybrid threat "activities of illegal armed groups", to identify priority factors of reduce this risk and to build an appropriate model and forecast.

4. THE MAIN MATERIAL

Deepening the theoretical and methodological foundations of the study of hybrid threats in Ukraine, scientists of the State Research Institute of the Ministry of

Internal Affairs of Ukraine launched a systematic research project based on unique empirical basis, in order to implement the general concept of strategic analysis of hybrid threats in the civil security sector, and appropriate modeling and forecasting based on risk assessment of the threats' spreading, as well as the ability to reduce these risks [1].

First of all, it is important to identify specific groups of hybrid threats. Their specificity involves the formation of specific countermeasures. Hybridization can extend to all areas of social behavior, in particular, criminality in the public security system is no exception. In a hybrid war, it is important to understand this approach, and therefore it is possible to hypothesize the spread of hybrid threats, in particular those related to the spread of criminality.

Strategies for hybrid warfare, in addition to the purely armed component, include the principles of "reflexive control", information propaganda, psychological pressure, denial of direct involvement in conflict, encouragement of desertion, cyberattacks and various espionage technologies [12]. According to F. Hoffman, criminality spreading is also an element of hybrid warfare, as criminality can effectively destabilize the political situation and contribute to illegal armed groups [13]. Rushchenko I.P., Professor of Sociology, speaking on hybrid war, notes that "social destabilization is simultaneously planned and carried out in three spheres: "chaos in heads", "chaos in institutions", "chaos in streets" [14].

Thus, it is quite reasonable to put forward a hypothesis about necessity of taking into account the hybrid warfare's peculiarities in the system of criminological analysis of criminality in Ukraine and further formation of state policy in the field of combating criminality with hybridity.

Based on the factor analysis (Table1, Figure 1) within the statistical test of our hypothesis, the groups with the largest share of the explained difference of some groups of hybrid threats were identified.

Using additional expert assessment of hybrid threats' content and their distribution environment, essential perception of hybrid threats with their subsequent distribution into 6 groups is formed, which are characterized as follows:

- hybrid threats related to the informative environment;

- hybrid threats associated with the use of cyber operations;

- hybrid threats related to the spread of criminality;

- hybrid threats related to provoke civil disobedience, violation of public order;

- hybrid threats related to the CIF activities (critical infrastructure facilities);

- hybrid threats related to corruption.

Table 1. Factor analysis of hybrid threats

Explained the total variance			
	Initial eigenvalues		
Factor analysis	Total	% variance	Summary %
1	52,024	39,713	39,713
2	7,589	5,793	45,506
3	4,881	3,726	49,232
4	3,717	2,837	52,069
5	3,141	2,398	54,467
6	2,625	2,004	56,470
7	2,476	1,890	58,360
8	2,072	1,582	59,942

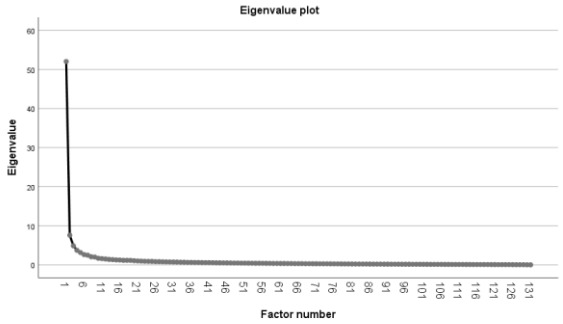

Figure 1 Factor analysis of hybrid threats

Thus, the hypothesis that there is a group of hybrid threats associated with criminality spreading has its confirmation and this area needs more thorough study.

The empirical basis and system of indicators, by which hybrid threats were identified and assessed, signifies 31 types of hybrid threats associated with criminality spreading (Figure 2).

This group of hybrid threats includes (Table 2): illicit trafficking in reinforced concrete; activities of illegal armed groups; provocation of separatism; emergence of new criminal schemes in economic sphere; terrorist financing; terrorist acts; illegal interference to the transport functioning; RAM activities aimed at deepening the criminogenic state; money laundering and others.

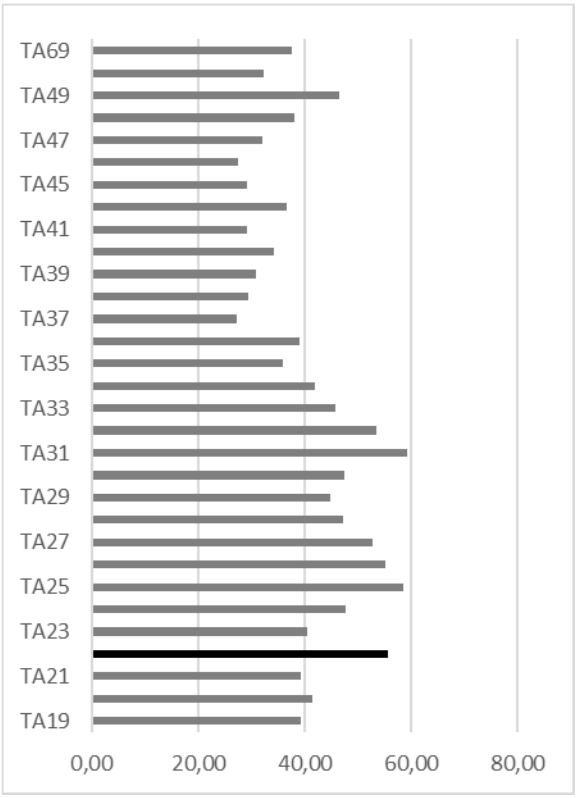

Figure 2 Rating of hybrid threats associated with criminality spreading

The most dangerous hybrid threats in the field of civil security, associated with criminality spreading, based on risk assessment [15] of their spread are: subversive acts in warehouses, arsenals of ammunition (59,2 %), provoking separatism (58,53 %), activities of illegal armed groups (55,74 %) and illicit trafficking in reinforced concrete (weapons, ammunition, explosives) (55,11 %).

The further analysis focuses on the activities of illegal armed groups, on one hybrid threat, a fairly high level of proliferation risk.

It was identified, based on the correlation analysis, the factors that have a certain statistical relationship with this threat. Only 53 indicators are characterized by a certain statistical relationship with the threat of "illegal armed groups" of the general list of indicators (152) that characterize the effectiveness of the law enforcement system in combating hybrid threats. Moreover, some of the correlates (43) have a negative value and potentially with increasing their assessment level will affect this threat reduction (Table.3). In addition, part of the correlates (10) has a positive correlation value and is characterized by the same tendency with the threat (Table 4).

Table 2. The most significant hybrid threats that associated with the criminality spreading

Hybrid threats related to the spread of criminality	Risk assessment, %
TA21 Purposeful activity of organized crime in the interests of the aggressor	39,25
TA22 Activities of illegal armed groups	55,74
TA24 Terrorist acts	47,75
TA25 Provoking separatism	58,53
TA26 Illicit trafficking in reinforced concrete (weapons, ammunition, explosives)	55,11
TA28 Smuggling of reinforced concrete	47,27
TA31 Subversive acts in warehouses, arsenals of ammunition	59,20
TA35 Spread of cross-border organized crime	35,98
TA48 Aggressor-initiated proliferation of money laundering in favor of separatists, information misinformers, etc.	38,00
TA49 Aggressor-initiated proliferation of terrorist financing	46,45

Under these conditions, it is also important to note that the factors that increase the risk of illegal armed groups are negative in nature and are characterized as vulnerability of the system to counter the hybrid threat of "illegal armed groups". Another group of factors will be perceived by us as the ability to counter this hybrid threat.

Along with these research results, it remains important the identification of key factors affecting identified hybrid threat and they are prior in reducing the spreading risk of the hybrid threat. For this purpose we have built a model of linear regression by the method of stepwise inclusion, stepwise exclusion and search for the best subsets. (Figure 3, Table 5).

Table 3. Statistical correlation analysis illegal armed activities formations with factors that characterize the ability

1 The organizational structures of the bodies of the Ministry of Internal Affairs system have been updated and improved.	-,108*	0,017
4 The democratic norms and procedures of the leading EU and NATO countries have been implemented in the software activities	-,110*	0,015
5.1 Experience of the Ministry of Internal Affairs in counteracting hybrid threats	-,122**	0,007
32 The level of financial support for the development of educational, scientific and research activities in the field of NB	-,117**	0,010
33 The level of capabilities of educational and research institutions for strategic research in the field of NB	-,101*	0,026
39 The effectiveness of the system for monitoring the use of crime in Ukraine in the aggressor's interests	-,167**	0,000
41.3.1 Level of use of analyte tools at the operational level	-,113*	0,013
41.3.2 The level of use of analyte tools at the strategic level	-,102*	0,024

Table 4. Statistical correlation analysis of relationship between the activities of illegal armed groups and the factors that characterize vulnerabilities

1 Imperfect regulatory and legal support for the activities of the bodies of the Ministry of Internal Affairs	,104*	0,022
2 Discrediting the reform of the bodies of the system of the Ministry of Internal Affairs by some l employees	,099*	0,028
3 Slow pace of the process of reforming the bodies of the Ministry of Internal Affairs	,130**	0,004
4 Low wages of lower level employees	,175**	0,000
5 Unmet needs (provided by law) of employees of the Ministry of Internal Affairs – ATO members	,131**	0,004
6 Some cases of impunity for employees of the Ministry of Internal Affairs	,162**	0,000
8.1 Insufficient level of professional training of managerial level	,139**	0,002
8.2 Insufficient level of professional training of executive level (staff)	,103*	0,024
12 Weakened internal control	,109*	0,016
23 The level of corruption among employees (of all categories) of the Ministry of Internal Affairs	,138**	0,002

The most optimal model of linear regression identifies the two most significant correlates of the activities of illegal armed groups: Deployed at the request of the Government of Ukraine of the EUAM to reform within the mandate to build the capacity of the authorities, Low wages of lower level employees. Therefore, capacity by factor «Deployed at the request of the Government of Ukraine of the EUAM to reform within the mandate to build the capacity of the authorities» was defined at 53.57%, and vulnerability by factor «Low wages of lower level employees» – 73,34 %.

In addition, the constructed model of linear regression makes it possible to calculate a forecast for reducing the risk of illegal armed groups as hybrid threat in the civil security sector, provided the amplification ability (Deployed at the request of the Government of Ukraine of the EUAM to reform within the mandate to build the capacity of the authorities) and reduction vulnerability (Low wages of lower level employees) by 20% (Figure 5).

It was determined the risk of spreading the activities of illegal armed groups provided the existing level of capability and vulnerability of counteraction system to this hybrid threat, taking into account the estimated values and applying the model of linear regression (Figure 4).

It should be noted that the risk level of illegal armed groups with the current level of capability and vulnerability (according to certain factors) (54.49%) is slightly lower than its assessment only on the integrated indicator of two assessment values likelihood and consequences (55,74 %).

5. CONCLUSIONS

Thus, based on factor analysis, key groups of hybrid threats in the civil security sector have been identified, among which it is reasonable to consider the group of hybrid threats associated with the criminality spreading.

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REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT TA22
  /METHOD=STEPWISE Rs1 Rs2 Rs3 Rs4 Rs6 Rs7 Rs8
Rs9 Rs10 Rs11 Rs12 Rs13 Rs15 Rs16 Rs17 Rs18 Rs19
Rs20 Rs21 Rs22 Rs23 Rs24 Rs25 Rs26 Rs27 Rs28 Rs29
Rs30 Rs31 Rs32 Rs33 Rs34 Rs35 Rs36 Rs37 Rs38 Rs39
Rs40 Rs41 Rs42 Rs43 Rs44 Rs45 Rs46 Rs47 Rs48 Rs49
Rs50 Rs51 Rs52 Rs53 Rs54 Rs55 Rs56 Rs57 Rs58 Rs59
Rs60 Rs61 Rs62 Rs63 Rs64 Rs65 Rs66 Rs68 Rs69 Rs70
Rs71 Ro1 Ro2 Ro3 Ro4 Ro5 Ro6 Ro7 Ro8 Ro9 Ro10
Ro11 Ro12 Ro13 Ro14 Ro15 Ro16 Ro17 Ro18 Ro19
Ro20 Ro21 Ro22 Ro23 Ro24 Ro25 Ro26 Ro27 Ro28
Ro30 Ro31 Ro32 Ro33 Ro34 Ro35 Ro36 Ro37 Ro38
Ro39 Ro40 Ro41 Ro42 Ro43 Ro44 Ro45 Ro46 Ro47
Ro48 Ro49 Ro50 Ro51 Ro52 Ro53 Ro54 Ro55 Ro56
Ro57.
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Figure 3 Syntax of linear regression of the threat "activities of illegal armed groups" (TA22)

Table 5. Linear regression model of the “activities of illegal armed groups”

Factor[a]					
Model	Unstand factors		Standard factors		P value
	B	Std. Err.	Beta	T	
(Constant)	51,156	2,717		18,829	0,000
Deployed at the request of the Government of Ukraine of the EUAM to reform within the mandate to build the capacity of the authorities	-0,169	0,038	-0,195	-4,435	0,000
Low wages of lower level employees	0,169	0,042	0,175	3,995	0,000

The most significant threats were identified, based on the risk assessment of spreading of 31 hybrid threats from this group: illicit trafficking in reinforced concrete; activities of illegal armed groups; provocation of separatism; emergence of new criminal schemes in economic sphere; terrorist financing; terrorist acts; illegal interference in the transport functioning; RAM activities aimed at deepening the criminogenic state; money laundering and others.

Model and forecast	Coeff	P value	**Rating %**	
(Constant)	51,156	0,000		
Deployed at the request of the Government of Ukraine of the EUAM to reform within the mandate to build the capacity of the authorities	-0,169	0,000	53,57	-9,05
Low wages of lower level employees	0,169	0,000	73,34	12,39
Use of cyber operations			**RA = 54,49 %**	

Figure 4 Risk assessment of using of “activities of illegal armed groups”

Coefficient	P value	Rating	
51,156	0,000		
0,169	0,000	73,57	-12,43
-0,169	0,000	53,34	9,01
			RA = 47,74 %

Figure 5 Forecast of the risk of “activities of illegal armed groups” if changing ability and vulnerabilities by 20%

Based on the correlation analysis, the factors that have a certain statistical relationship with this threat were identified. Only 53 indicators are characterized by a certain statistical relationship with the threat of "illegal armed groups" of the general list of indicators (152) that characterize the effectiveness of the law enforcement system in combating hybrid threats. Moreover, a part of the correlates (43), which have a negative value, are in a certain way capabilities and potentially, with increasing their assessment level, will reduce this threat. In addition, some correlates (10) that have a positive correlation value are interpreted as vulnerabilities and are characterized by the same trend with the threat.

Based on the linear regression model, the risk of the spread of illegal armed groups given the existing level of capability and vulnerability is assessed, and priority factors for reducing this risk are identified: Deployed at the request of the Government of Ukraine of the EUAM to reform within the mandate to build the capacity of the authorities

and Low wages of lower level employees, and also the corresponding model and the forecast are constructed.

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